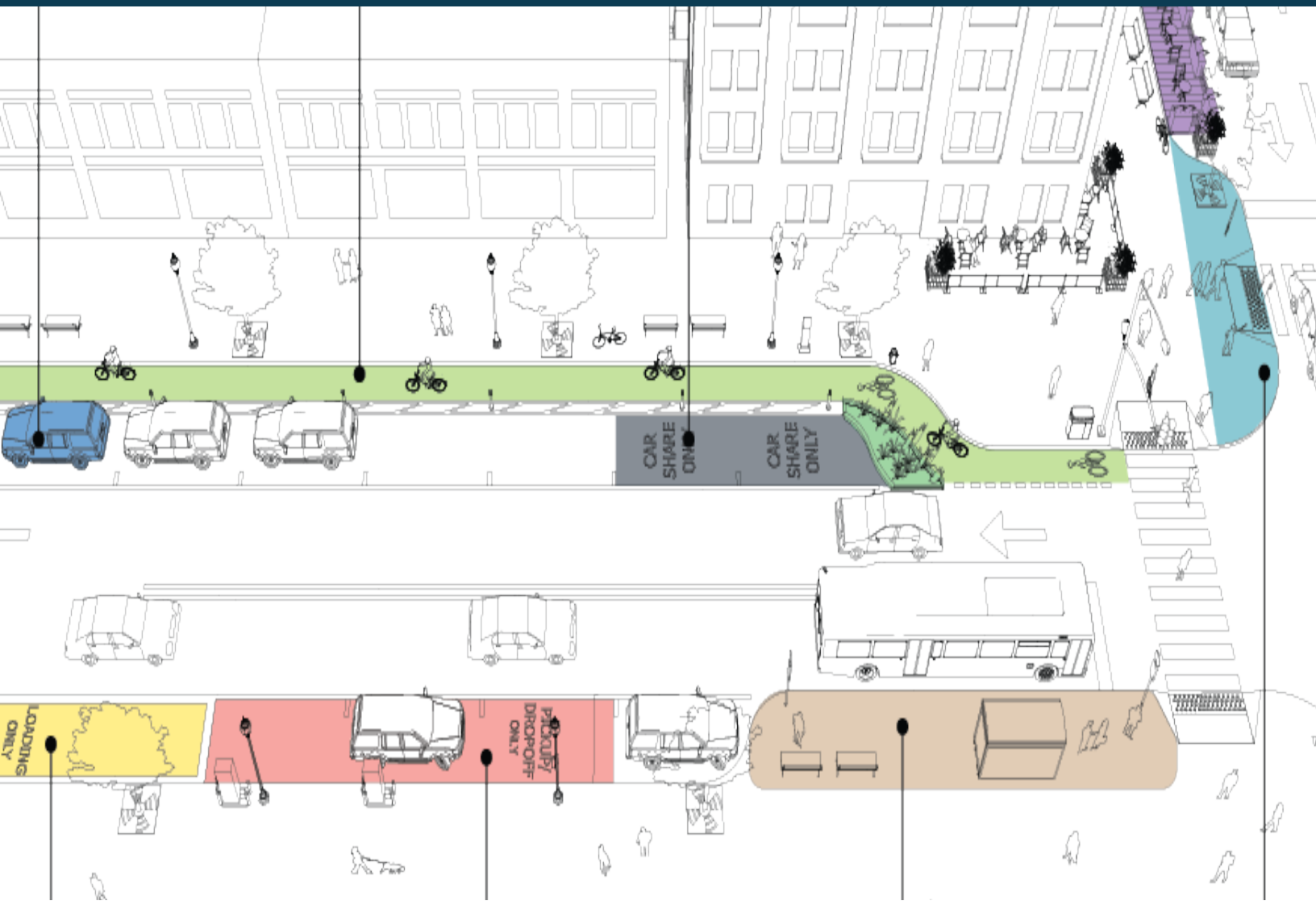
# CITY OF BOSTON CURB USE GUIDE & ACTION PLAN

UPDATED AUGUST 2024




CITY of BOSTON

Transportation

Public Works

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# EXECUTIVE SUMMARY

## CURB USE GUIDE & ACTION PLAN

The curb is more than just the edge of the street. It's a space where cars on the road, people on the sidewalk, and nearby homes, offices, stores, and restaurants all come together. This area is where residents, workers, and visitors interact every day. How we regulate the curb, use the curb lane, and what we place next to the curb affects how well this area works.

The City of Boston's Curb Use Guide & Action Plan is a plan for evaluating curb access needs and making decisions about how to manage this space. The Guide highlights the need for a new approach to curb management. This approach is outlined through a set of strategies and projects that will lead the City into the future of curb management. The Guide introduces new tools, policies, and processes to help the City:

1. Align the City's curb use policies with its transportation and climate change goals;
2. Allocate curb space fairly and for the greater public good;
3. Adapt to new and changing curb use demands.

## GUIDING PRINCIPLES

To make the ideas in this Guide a reality, the City needs to finish several projects over the next few years. For this to work, everyone involved must understand the key ideas behind how we decide on curb changes. These decisions require balancing different principles based on the situation. Here are the principles guiding our choices:

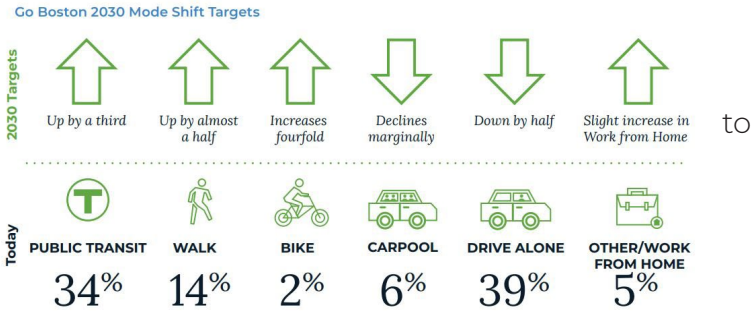
1. **Safety for All:** The curb zone will be designed to ensure that people who don't use vehicles have the space they need to move around safely.
2. **Fair Access:** The curb zone will be allocated fairly, prioritizing uses that provide access to the most people.
3. **Better Quality of Life:** The curb zone will enhance the quality of life for residents and visitors by reducing stress, increasing safety, and saving time.
4. **Support for Local Businesses**: The curb zone will support the economic activity of small and locally owned businesses, meeting the needs of both businesses and their customers.
5. **Modern Management:** The curb zone will be managed using the latest technologies and through partnerships with private companies, helping the City achieve its goals.
6. **Transparent Communication:** Changes to the curb zone will be communicated clearly, with efforts to involve impacted communities in the decision-making process.

# RETHINKING CURB USE IN BOSTON

Changes in how we travel, receive goods, and define public space is transforming how we view the use of the curb. Traditionally used for motor vehicle parking, we recognize the value of the curb as a place that supports an entire city of people and the life and vibrancy that occurs each day. This Guide provides an organizational blueprint to address this increasingly complex and diverse environment.

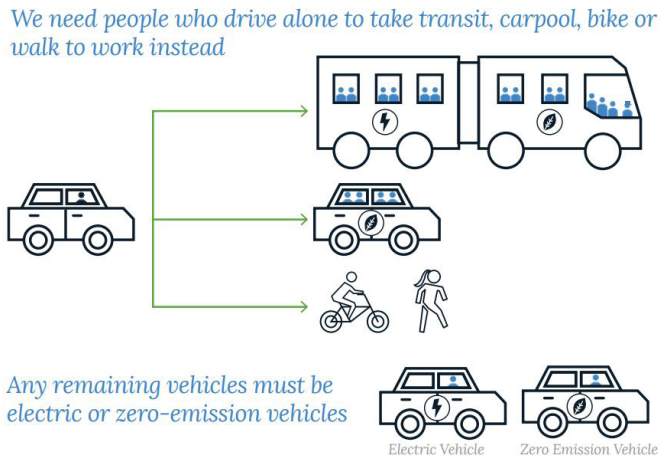
## ALIGNING CURB USE POLICIES WITH CITYWIDE GOALS

Boston is working to make transportation better, safer, and more reliable. The city's plan, Go Boston 2030, includes over 58 projects promote walking, biking, and public transit. The goals include cutting drive-alone trips by more than half, increasing public transit use by over a third, increasing biking four times, and doubling walking rates.




to

Boston aims to be carbon neutral by 2050, which means it wants to reduce carbon emissions from transportation. Transportation makes up 29% of the area's emissions, with 65% coming from passenger vehicles. The Boston Climate Action Plan and the Zero Emission Vehicle Roadmap show a future where car trips are replaced by walking, biking, and public transit, and any remaining cars are zero-emission and shared.




Together with the Tactical Public Realm Guidelines, the Complete Streets Design Guidelines, and the Vision Zero Action Plan, these plans set goals and strategies for how Boston will manage its streets and curbs.


Mass Ave Bus Stop near Newbury

## DISTRIBUTING CURB SPACE MORE FAIRLY

The majority of Boston's curb space is dedicated to private car parking. While this benefits car owners, it creates challenges for people who rely on public transportation, biking, or walking. Prioritizing car parking assumes that most people travel by car, but Go Boston 2030 found that over half of Bostonians use other transportation methods. As more people and goods move around the city without cars, the current use of curb space is no longer effective.

To use curb space wisely, we need to be open to different ideas. The curb is important for everyone, not just cars. It can be used for quick stops, bike parking, or even as public space. Different ways to use the curb can help stores and make our neighborhoods more fun. We should find ways to use the curb that work for everyone, like adding bus lanes, bike paths, and places for people to relax.

## UNDERSTANDING CURB PRODUCTIVITY

The need for curb space means our curbs have to be flexible. On average, a car stays parked 95% of the time. This means when a curb is used for private car parking, one car takes up that space for a long time, limiting access for others. We can measure this by looking at curb productivity.

Curb productivity shows how many vehicles, people, and goods use a section of the curb over time, based on the rules in place. To calculate this score, you count the number of people or goods (activity), divide it by the length of the curb (length), and then multiply by the time you observed (time). This gives you a curb productivity score.

**CURB PRODUCTIVITY MEASURES HOW MANY VEHICLES, PEOPLE, AND GOODS CAN USE A PART OF THE CURB OVER TIME**

For example:
If you observe a parking space (20 feet long) for three hours and see 10 people using parked cars, the curb productivity is 10 people divided by 3 hours = 3.3. So, this 20 feet of curb, used as parking, gives access to about 3 people per hour.

Now, if you observe the same space as a pick-up/drop-off zone and see 35 people using it in three hours, the curb productivity is 35 people divided by 3 hours = 11.7. So, this 20 feet of curb, used as a pick-up/drop-off zone, gives access to about 12 people per hour.

Curb productivity depends on the demand for the activity. If there is little or no pick-up/drop-off activity happening, then parking might be a more productive use of the curb at that spot. This is why it's important to understand the curb access demands in a particular area.

**Street parking in the North End**

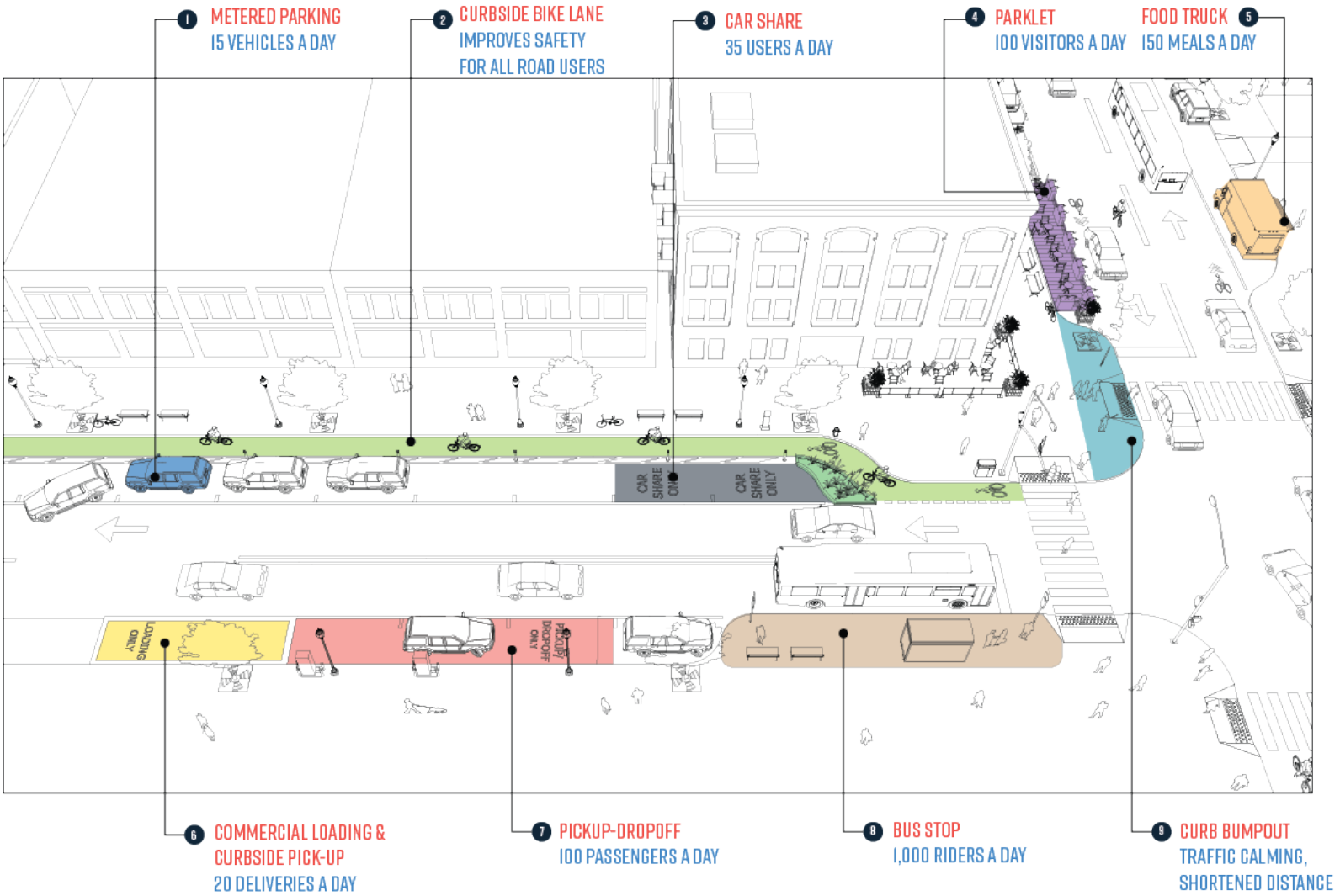
# MANAGING THE CURB TO MEET DEMAND

The curb isn't just a line marking where the street ends. It's a zone where cars on the road, people walking on the sidewalk, and buildings like homes, offices, and stores all come together. How we manage the curb, what we allow in the curb lane, and what we place next to it affects how well this area works for everyone.

The picture below shows how many cars, people, and things can fit in different parts of the street. This helps us see that we can use the space in many ways besides just parking cars.

We can make our streets more enjoyable by adding things like small parks and food trucks. We can help people get where they're going faster by creating places for cars to pick up and drop off people, and by improving bus stops. We can also make it easier for everyone to get around by giving trucks places to stop, putting bike lanes next to parking, and making it safer for people to cross the street.

This is called using street space wisely. We can change how we use the curb to fit what people need in that area.



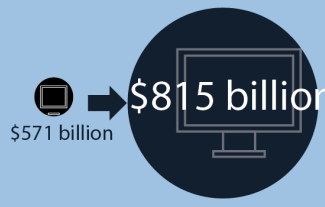
# RESPONDING TO CHANGING DEMANDS

The way people and goods move around Boston is changing. The rise of on-demand services and shared transportation has put more pressure on curb space. Most curb space has traditionally been used for private car parking, but now it's in high demand. App-based food delivery, e-commerce, and ride-hailing services are all competing for curb space along with traditional delivery trucks. This leads to double parking, blocked bus and bike lanes, more traffic jams, and unsafe conditions for everyone.

## Increased Competition from New Curb Uses

### E-Commerce and On-Demand Delivery

In 2019, Amazon alone delivered about 2.5 billion packages in the United States, an estimated 20 packages for every household[1]



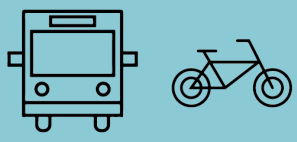

More people are shopping online. Between 2019 and 2020 e-commerce sales increased 43%, and while slowing to 9% between 2020 and 2021, the behavior change has taken hold [2]

In 2021 there was an estimated 79 to 106 million third-party app delivery trips in Massachussets, the equivalent of 11 to 15 deliveries per resident [3]

### Ride-Hail and Passenger Trips

In 2019, 45 million trips were taken in Boston with Uber and Lyft. This dropped to 16 million In 2020, and 18 million in 2021. At the same time the number of app-based deliveries were increasing, demonstrating how demand for curb space can change [4]

### Sustainable Transportation



Boston is making it safer and more reliable to travel by non-car modes. Miles of curb lanes are being transformed into dedicated bus lanes and seperated bike facilities [5]

### Shared Mobility

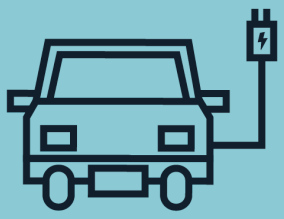
In 2021 nearly 3 million trips were taken on the regional public bike share system, up from 2 million in 2020 [6]

In 2020 the City of Boston expanded its partnerhip with car share operators from 40 leased parking spaces to 250 [7]

### Population Growth

By 2030, the population of Boston is projected to grow by approximately 15 – 17%, to a city with 710,000 to 724,000 residents [8]

### Electric Vehicle Charging



Electric Vehicles are becoming more promninent and they need places to charge. It is estimated that by 2025 Boston will need an additional 1,000 Level II chargers and 300 Level III chargers, and with limited off-street parking spaces, many will need to be installed curbside [9]

### Outdoor Dining and Active Street Use

The pandemic transformed the way we use our streets. In 2020 300 restaurants participated in the on-street dining program, occupying 13,000 feet of curb, or the equivalent 650 parking spaces. In 2022 Open Streets Boston closed several miles of streets to cars, making them accessible for pedestrians, and turning them into public spaces for events and activities [10]

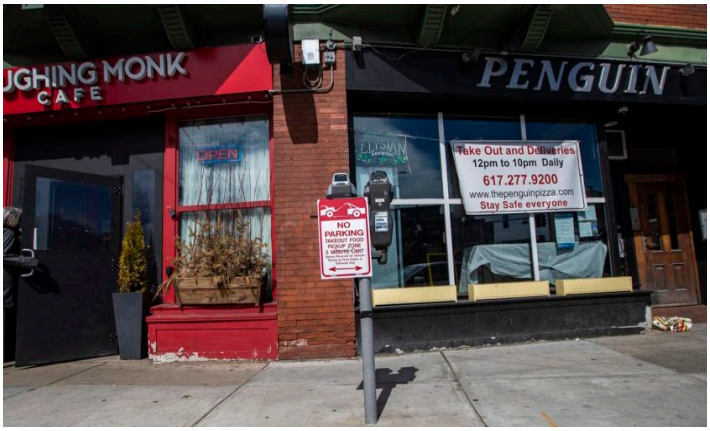
Sources: See Endnotes1

# LEARNING FROM THE PANDEMIC

In March 2020, much of the United States shut down because of the COVID-19 pandemic. Offices closed, businesses had limited capacity or shut down, curfews were set, and transportation patterns changed a lot. The City adapted to meet the needs of residents and businesses, becoming flexible with traditional policies and procedures. In response to these new demands, the City started several temporary projects that changed the way we do business today.

## Food Takeout Zones

Pandemic restrictions led to more food take-out activity, so the City created a program for 5 Minute Takeout Zones. The City made a quick online application and sped up the review and approval process. In the first year, the City set up more than 200 takeout zones using 500 parking spaces. This program changed how the City prioritizes different curb uses.




**Temporary food takeout sign on a parking meter**

## On-Street Curbside Dining

When restaurants couldn't serve food indoors, they turned to public sidewalks and streets. Multiple departments worked together to quickly start a program that made it easier to set up sidewalk and on-street cafes. This allowed restaurants to have outdoor dining with fewer restrictions. In 2020, more than 350 restaurants had on-street cafes. This program has now become a permanent part of the city.

**On-Street Dining in Jamaica Plain**

## Quick Build Bike Lanes

The need for social distancing meant more people were walking and biking. The increase in bike ridership meant the City needed to act quickly to provide safe bike facilities. The City sped up plans for separated bike lanes and installed temporary bike lanes on many Downtown streets. This led to more than six and a half miles of separated bike lanes being built in a short time. This progress has continued, with more bike lanes being built throughout the city.

**Quick build bike lane on Boylston Street**

# CURB USE FRAMEWORK

The curb zone has many parts that support different activities. Whether it's for retail, restaurants, offices, or homes, the curb zone needs to work in different ways. A curb can be used for parking, loading, bus or bike lanes, or car share services. These uses determine who can access the space, for how long, and for what purpose. To help decide how to use the curb, this Guide introduces a prioritization framework that identifies categories of curb uses and street types.

Curb uses are ways the space supports people, goods, and services. In this framework, curb uses are grouped and categorized by the activities they support. Street types are taken from the City of Boston's Complete Streets Guidelines to help understand how a curb zone should work. Prioritizing curb uses based on street types gives guidance on how best to manage the space.

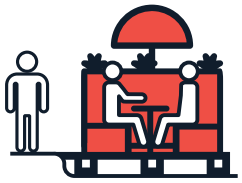

**View towards downtown from a street in Charlestown**

Source: https://tinyurl.com/3rzeneh

# CURB USE CATEGORIES

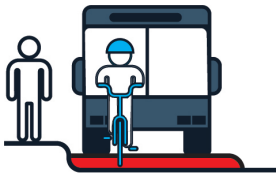
Curb uses are ways in which curb space facilitates the activity of people, goods, and services. The following curb use categories include curb management strategies and regulations that prioritize access for different purposes. These curb use categories contain curb uses that result in similar regulatory approaches, and have similar impacts on the curb zone.

**Access to Services**
This icon shows an electric vehicle using a charging station and represents curb space providing access to services. Example services include car share, electric vehicle charging, bike share stations, and cab stands.



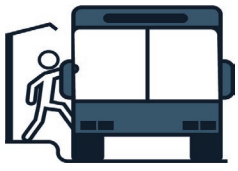
**Active Public Spaces**
This icon shows a parklet and outdoor dining area, representing the curb being used as an active public space. Example active uses include parklets, extended sidewalks, food truck zones, and curbside dining.

**Goods Delivery and Commercial Vehicle Parking**
This icon shows a person using a handcart to move packages from a truck, representing commercial vehicle activity. Example regulations include commercial loading zones, neighborhood delivery zones, staging areas for transfers to smaller vehicles, and metered parking for trades and contractor vehicles.



**Multi-Modal Movement**
This icon shows a person riding a bike in front of a bus in a bus lane, representing multi-modal movement. Examples of multi-modal movement include separated bike lanes, bus lanes, and peak time travel lanes.

**Parking**
This icon shows a car parked next to a meter, representing parking. Example regulations include metered parking, residential permit parking, and time restricted parking.



**Public Transportation Access**
This icon shows a person getting on a bus, representing public transportation access. Example regulations include MBTA bus stops, access to subway stations, bus layover and transfer points, and shuttle stops.

**Short-Term Curb Access**
This icon shows a person quickly moving away from a vehicle, representing short-term curb access. Example regulations include pick-up/drop-off and delivery, passenger pick-up/drop-off, and parking for 30 minutes or less.

# CURB USE STREET TYPES & LAND USE

Effective curb management begins with understanding the demands for curb access from nearby land uses and the competing needs of different transportation modes. The Street Type classifications in the Boston Complete Streets Design Guidelines help categorize streets based on common conditions like land uses and transportation needs. The Street Type and the typical activities it generates provide the context needed to create the Curb Use Prioritization Matrix, a planning tool used to guide how curb space should be managed.

The Street Types used for the Curb Use Prioritization Matrix include Downtown Commercial, Downtown Mixed-Use, Neighborhood Commercial, Neighborhood Residential, and Neighborhood Connector.

### Downtown Commercial

Downtown Commercial Streets define Boston's dense commercial core. These street types are mainly found in the Financial District, Government Center, Back Bay, and the South Boston Waterfront. They have a mix of mid- and high-rise office buildings and serve as international cultural destinations. They also connect with highways and transit hubs that serve the Greater Boston area.

### Downtown Mixed-Use

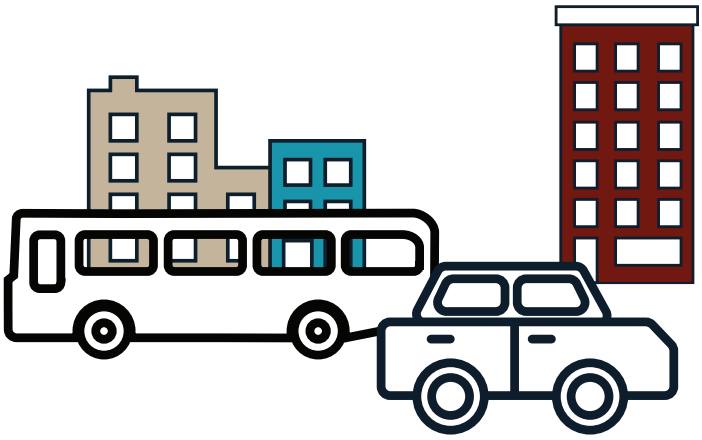
Downtown Mixed-Use streets are busy areas with a mix of shops, homes, offices, and entertainment, making them some of the city's most vibrant public spaces. While these streets are often smaller than Downtown Commercial Streets, they still serve residents, visitors, and workers. They should be designed to encourage walking, biking, and using public transit, while also having short-term parking and loading zones to support local businesses.

### Neighborhood Commercial

Neighborhood Commercial Streets are usually found in the center of a residential area. They are lined with small businesses, often just a few blocks long, with shops and services on the ground floor. These streets are important for the local economy, offering residents everyday essentials from locally-owned stores, as well as services like banking and dry cleaning. Like Downtown Mixed-Use Streets, these areas are designed to make walking, biking, and using public transit easy, with short-term parking and loading zones for local shops and restaurants.

### Neighborhood Residential

Neighborhood Residential Streets give direct access to Boston's many homes, including town-houses, triple-deckers, and single-family houses. These streets are mainly used for local travel and usually have less traffic and fewer pedestrians. They often offer on-street parking with permits for residents. The main purpose of these streets is to support a good quality of life for the people living in the city. They usually have two lanes, one in each direction, and are not meant for through-traffic.



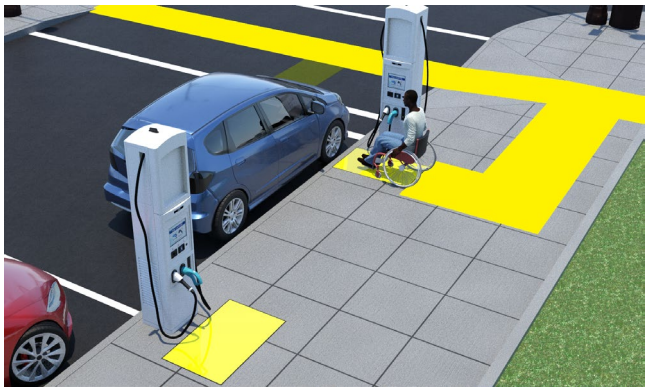
### Neighborhood Connector

Neighborhood Connector Streets are main roads that may pass through several neighbor-hoods and are key parts of Boston's transporta-tion system. These streets provide continuous routes for biking, transit, and vehicles. While they help people move between neighbor-hoods, it's important to balance the needs of those traveling through with the needs of the people who live and work along these streets.

# ACCESSIBILITY, GREEN INFRASTRUCTURE, AND CLIMATE CHANGE

## Accessibility

To ensure our public spaces are welcoming and usable for everyone, we prioritize accessibility in our curb use planning. The Boston Transportation Department collaborates with the City of Boston's Disabilities Commission to identify the best locations for accessible parking and other curb uses. As we update our curb management, we will also continue to focus on improving accessibility. This graphic is new design standards for curbside EV charging stations. that will help us install them so they are accessible

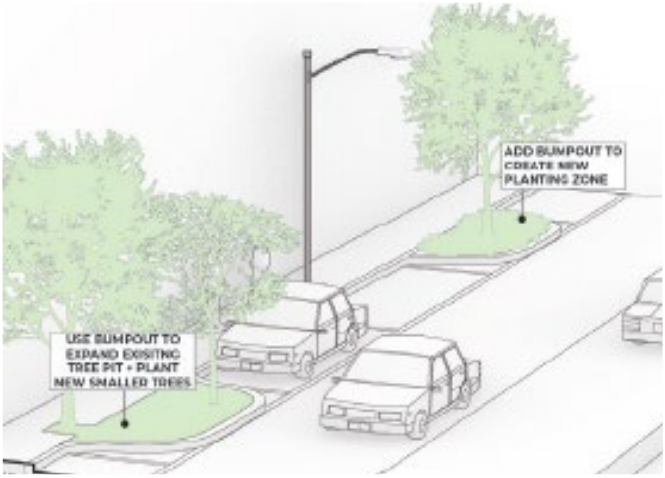


**Locating EV charging stations near intersections increases accessibility.**

## Green Infrastructure

The curb zone is important for more than just transportation. The City's Urban Forestry Plan explains how curb extensions can help grow trees and support green infrastructure. Curb extensions widen the sidewalk into the curb lane. They are often used to improve safety by shortening crossing distances, slowing down vehicles, and creating a barrier along the curb.

Curb extensions can also create space for green features like rain gardens, bioswales, tree pits, and porous asphalt. These features help collect and filter storm water, reduce heat, and provide shade.




**This graphic shows curb extensions that take a portion of the curb lane for trees and other green infrastructure.**

## Mitigating the Impacts of Climate Change

Transportation makes up 29% of greenhouse gas (GHG) emissions in the City of Boston, with 65% of that coming from passenger vehicles. To cut down on these emissions, we need to reduce the number of people driving and encourage more walking, biking, and use of public transit.

Curb management can help by supporting low-carbon transportation options like bus and bike lanes. It can also improve parking by making sure people don't drive around looking for a spot and by setting parking prices to reflect the true value of curb space and discourage unnecessary car trips. Adding services like car-sharing and bike-sharing stations reduces the need for people to own their own vehicles, which frees up curb space for other uses like green infrastructure. We are also helping the shift to electric vehicles by installing EV charging stations.

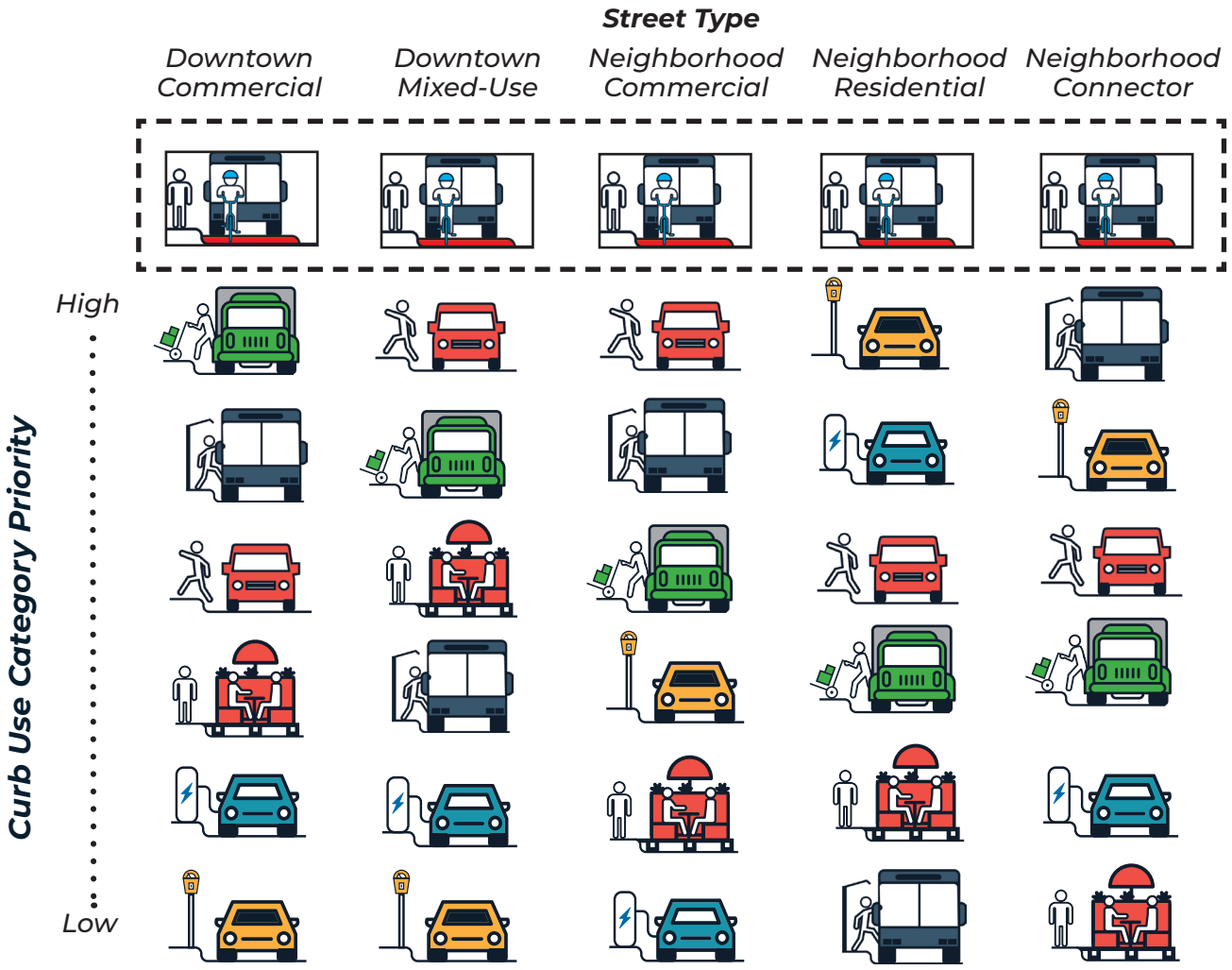
# CURB USE PRIORITIZATION

The Curb Use Prioritization Matrix ranks curb uses based on the type of street and the activity it supports. It lists different curb use categories for each street type in order of importance, showing which uses will best meet curb access needs. This Matrix is a planning tool that helps decide how to manage curb space.

## MAKING CURB USE DECISIONS

The Matrix shows which curb use categories should be considered first. However, this isn't a strict rule. Curb uses should adapt to changes over time and in different locations, and many areas will need a mix of both high and low-priority uses. Each street is unique, so priorities can change by intersection, block, time of day, and day of the week. The 'Multi-Modal Movement' category is at the top of the Matrix to emphasize that safely moving people and goods is our top priority. Decisions about multi-modal movement are handled separately and consider curb access needs.

## PRIORITIZATION MATRIX



# PRIORITIZING CURB USES ON BOSTON'S STREETS

The Street Types in the Complete Streets Design Guidelines balance different factors like how the street is used, what's around it, and the needs of various transportation modes. Each Street Type prioritizes different uses and design features based on the neighborhood and street character. For example, Boston's Downtown Commercial areas and busy Mixed-Use streets have different priorities compared to Neighborhood Commercial, Residential, and Connector Streets. In the following section we identify each Street Type and list curb uses in order of importance, and explain how each use can be applied.

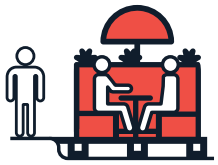
# DOWNTOWN COMMERCIAL

Downtown Commercial Streets are at the heart of Boston's busy commercial areas, mainly in the Financial District, Government Center, and the South Boston Waterfront. These streets are lined with mid- and high-rise buildings that support both businesses and residents. They are crucial for moving people and goods, and curb demands can vary by time of day and day of the week. Many bus routes, subway lines, and bike lanes come together on these streets. Examples include Congress Street (Government Center, Financial District), State Street (Government Center, Financial District), and Summer Street (Financial District, South Boston Waterfront).

**Goods and Parcel Delivery.** Loading zones for commercial vehicles and multi-purpose pick-up/drop-off and delivery zones will be placed next to commercial properties and spread out along commercial areas to meet demand. These zones might have different rules depending on the time of day. Curb space could also include distribution microhubs for zero-emission last-mile deliveries. In areas with low demand for deliveries, there is long-term paid parking for commercial vehicles.

**Pubic Transportation Access.** Bus stops will be placed and sized to handle the number of riders, make transfers between the subway, commuter rail, and trolley lines easy, and be close to popular destinations and areas with high demand. There will be amenities such as shelters, seating, lighting, and real time arrival information. Some spots will also be used for bus layovers.

**Short Term Curb Access.** General-purpose pick-up/drop-off and delivery zones will offer easy access for on-demand app services and quick trips. Passenger loading zones will be placed in areas with high demand and timed for 5 to 15 minutes. Some zones may be geofenced for ride-hail services. These zones can be flexible, allowing for deliveries during the day and passenger loading in the evening.



**Active Public Spaces.** Streets with less traffic might have on-street dining and parklets. Slip lanes and extra street space will be turned into plazas and parks. Food truck zones, mobile vending, and other active curb uses can be adjusted for short-term curb access and parking based on the time of day.

**Access to Services.** Bikeshare stations will be placed near busy transit stops for easy connections, mostly off the street. On-street bike corrals will provide extra bike parking in busy areas. Cab stands will be set up in high-demand places like South and North Station. Valet zones will be next to restaurants and can be used for other curb activities during the day. Curbside EV charging stations can be placed next to metered parking. Car share services will replace parking spaces to use space more efficiently.

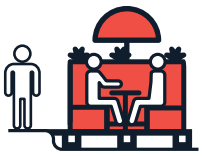
**Parking.** On-street parking will be limited, metered, and priced to encourage regular use. Meters will be in operation at least six days a week and will run until 10pm or later. We may also adjust timing and pricing based on demand. Loading zones and other short-term curb spaces should switch to metered parking in the evening. There will also be parking for motorcycles and smaller vehicles. ADA accessible parking will be a top priority.

# DOWNTOWN MIXED USE

Downtown Mixed-Use streets are busy areas with a mix of retail, residential, office, and entertainment uses, making them some of the city's most vibrant public spaces. You can find these streets in neighborhoods like Back Bay, Beacon Hill, North End, South End, Fort Point Channel, West End, Chinatown, and around Kenmore Square and Fenway Park. They are usually smaller than Downtown Commercial Streets but still serve residents, visitors, and workers. Curb zones on these streets should help create lively, attractive public spaces and provide access to businesses and residential buildings. Examples include Newbury Street (Back Bay), Tremont Street (South End), Hanover Street (North End), and Brookline Avenue (Fenway).

**Short Term Curb Access**. General pick-up/drop-off and delivery zones will be located at the beginning and end of blocks. These zones will be used for delivering goods, food, and quick trips. Depending on demand, they might be changed to passenger loading zones at different times of the day. Some blocks may need a lot of curb space set aside for short-term access to handle high demand.

**Commercial Vehicle Delivery and Parking.** Commercial vehicle loading zones will be designed to serve several businesses at once and will be large enough for multiple vehicles. Some blocks might need a lot of curb space for deliveries during busy times and change to other uses at different times of the day. There will also be longer-term parking for contractor and trade vehicles in areas where there is less demand for other uses. Rules will be set to limit deliveries during busy times to avoid congestion.



**Active Public Spaces.** Seasonal curbside dining will be set up in areas with many restaurants. Other spots will have parklets, public art, and green spaces. Food trucks may also be placed between restaurants. The goal is to keep the public spaces lively and engaging.

**Pubic Transportation Access.** Bus stops will be placed on streets that run parallel to or cross busy commercial and active areas. These stops can be combined with street furniture and other public space elements in the curb zone to create a multi-use area for both public transportation and community activities.

**Access to Services.** Car share services will be placed near bikeshare stations, bike parking, and public transportation stops. On-street bike corrals and secure parking for e-bikes will be available. Curbside EV charging stations will be located near residential buildings. Bikeshare stations will be easy to access. Cab stands will be limited to general passenger pick-up/drop-off zones, and valet zones will be few, shared, and flexible with other uses.

**Parking.** On-street parking will have meters to encourage regular use. Meters will be active at least six days a week, running until 8pm or later in residential areas and until 10pm or later in busy commercial areas. In residential areas, meters might switch to resident permit parking at night. ADA accessible parking will be a top priority.

# NEIGHBORHOOD COMMERCIAL

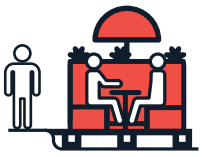
Neighborhood commercial streets are usually found in the center of residential areas. They are known for having lots of ground-floor shops and businesses, often within a few blocks. These streets are the heart of the neighborhood economy, providing daily needs for residents with locally-owned businesses like barber shops and dry cleaners. Many of these areas are part of the City's Main Streets Program and have active local organizations. Examples include Centre and South Street (Jamaica Plain), Dudley Street (Roxbury), Maverick Square and Day Square (East Boston), and Dorchester Avenue (South Boston, Dorchester).

**Short Term Curb Access:** General pick-up/drop-off and delivery zones will be placed where needed, usually one per block. These zones can be flexible, used for parking or loading at different times of the day. Where there are bus or bike lanes more space may be needed for short-term curb access to reduce lane blocking.

**Public Transportation Access:** Bus stops will be spaced to make it easy for people to reach businesses and residential streets along the corridor. In-lane bus boarding will be prioritized to reduce impacts on available curb space. Bus stops should be collocated with short-term curb access zones to reduce bus stop blocking.

**Commercial Vehicle Delivery and Parking:** Most deliveries will happen in general pick-up/drop-off and delivery zones. In busy commercial areas, a few commercial vehicle loading zones may be needed, and one or two zones might be enough to serve all the businesses nearby. Zones can be flexible, providing loading in the morning and parking or short-term curb access in the afternoon.

**Parking:** On-street parking will be timed to encourage frequent turnover, with most spaces being metered. Parking restrictions will apply six days a week, lasting until 6pm or later. Resident parking might be located on the edges of the commercial district to protect parking for residents. On street accessible parking will be a priority, with a goal of having one per block on each side of the street. Timed parking of 4 hours or more at the edges of the commercial area can provide parking for employees as well as visitors to businesses that may require more than a two hour time limit.



**Active Public Spaces:** Seasonal curbside dining can be set up in front of restaurants. Curbside parklets, public art, and green spaces can increase active areas. Redundant streets might be turned into pedestrian plazas and used for community events like farmer's markets.

**Access to Services:** Seasonal bike share stations and bike corrals will be placed on-street during warmer months to meet increased demand. Car share options will be located in off-street lots, on side streets near residential areas, and close to frequent transit stops. Bike parking will be available on every block. EV charging stations will be located off-street, or on side streets leading to residential areas. There will be few if any valet or cab stands.

# NEIGHBORHOOD RESIDENTIAL

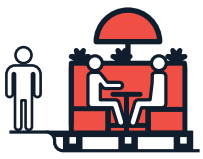
The main purpose of a Neighborhood Residential Street is to provide a good quality of life for residents living in Boston's townhouses, triple-deckers, and single-family homes. These streets mostly handle local traffic with no more than two lanes and have lower vehicle and pedestrian activity. The curb should be designed to help slow down cars and reduce through traffic. Curb demand is mainly for resident parking and deliveries from parcel and on-demand services. Some areas might need resident permit parking if data shows it's necessary, along with neighborhood delivery zones and curbside electric vehicle charging.

**Parking:** On-street parking will mainly be for residents and their guests. Most parking will be open to everyone, but resident permit parking (RPP) might be needed to reduce non-resident parking near transit stations, shopping areas, and other popular spots. Where there is RPP space should be maintained for non-resident parking to provide parking for services, visitors, and other non-residents.

**Access to Services:** Car share options will be located in residential neighborhoods to help reduce the need for owning a personal vehicle. Curbside electric vehicle (EV) charging stations may be placed at the beginning of blocks or in front of homes, and they will be accessible to the public. Some neighborhoods may benefit from on-street bike or sidewalk level secure bike parking to allow for owning an e-bike or other micro-mobility device that may be too heavy to carry up stairs.

**Short Term Curb Access:** General pick-up/drop-off and delivery zones, or neighborhood delivery zones, may be needed in areas with lots of e-commerce, delivery services, and passenger drop-offs. Most of these activities will likely happen at any available curb space, and sometimes even in the travel lane. Bike share stations will be located near main streets, at the end of commercial streets.

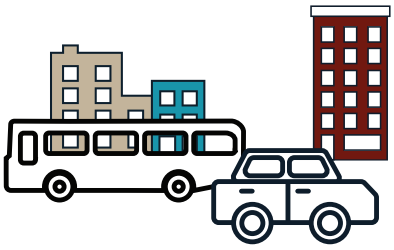
**Commercial Vehicle Delivery and Parking:** Commercial deliveries will use general-purpose zones where available. If not, they will use any open curb space or even the travel lane. Non-resident parking should be available in resident permit parking zones to allow parking for commercial contractor and other vehicles. Some neighborhoods could benefit from delivery lockers that concentrate deliveries into one location, to reduce delivery impacts on the block.



**Active Public Spaces:** Using curb and street space for neighborhood activities is encouraged. Streets should be calm and traffic should be slow to allow the use of streets for active play. Adding speed humps as part of safety measures may make some neighborhood streets safer for these activities. Providing space for deliveries and short-term curb access can help reduce conflict that may occur on the street.

**Public Transportation Access:** Bus stops will be placed on connecting streets, likely in neighborhood connectors or commercial areas.

# NEIGHBORHOOD CONNECTOR



Neighborhood Connector Streets are key routes that run through several neighborhoods, providing continuous paths for walking, biking, and major bus routes. While these streets are important for moving people between neighborhoods, it's essential to balance the needs of those passing through with the curb access demands of residents and workers along the street. These streets can have different land uses, speeds, and widths, so the design and curb needs might change along the way. Street design should focus on efficient vehicle and transit movement, continuous and comfortable bike lanes, wide sidewalks with buffers from traffic, and safe crosswalks at intersections. Example streets include Cummins Highway (Roslindale, Mattapan), Washington Street (South End, Roxbury, Jamaica Plain, Roslindale), and Cambridge Street (Allston, Brighton).

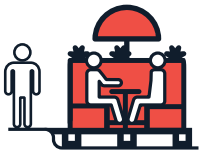
**Public Transportation Access:** Bus stops will be spaced to make it easy for people to connect to other transit, access destinations along the corridor, and reach residential areas. These streets may include bus lanes that occupy the curb space.

**Parking:** On-street parking will take up most of the space not used for other transportation modes or curb activities. While parking will usually be unrestricted, some areas might have time limits, meters, or be reserved for Resident Permit parking as the neighborhood changes.

**Short-Term Curb Access:** Pick-up/drop-off and delivery zones might be needed near clusters of businesses and larger residential buildings with a lot of deliveries or passenger pick-ups.

**Commercial Vehicle Delivery and Parking:** Most deliveries will happen in general pick-up/drop-off and delivery zones. However, if needed, specific spaces should be set aside for commercial deliveries to prevent double parking.

**Access to Services:** Car share and bikeshare spots can be placed near bus stops and close to residential streets. Curbside EV charging may also be suitable near residential areas.



**Active Public Spaces:** Active public spaces like food trucks and curbside retail may be set up, but since the street is mainly for passing through with a lot of traffic, curbside activities may not always be appropriate.

# CURB USE ACTION PLAN

The City of Boston aims to cut down greenhouse gas emissions and become carbon neutral by 2050. To achieve this, the City needs to reduce car trips and encourage more sustainable ways to travel, like walking, biking, and using public transit. The Go Boston 2030 plan and the Climate Action Plan outline several projects the City is working on to reach this goal. Building on these plans, the Curb Use Action Plan introduces new strategies, policies, and projects to change how the City manages its curb space.

## CURB USE ACTION PLAN GUIDING PRINCIPLES

These guiding principles serve as the foundation for how the City makes curb use decisions. These principles identify the importance of the curb zone and how it relates to everyday quality of life the City's residents and visitors. The new polices and regulatory approaches identified in this Action Plan are grounded in these principles.

1. **The curb zone will be designed to ensure that people who don't use a car have the space they need to move around safely.** Vehicle crashes are one of the leading causes of death in the country. In busy cities like Boston, where many people walk, bike, or use other non-car methods to get around, the risk of accidents is high. In 2022, Boston saw nearly 3,000 reported crashes, with 79% involving vehicles, 13% involving pedestrians, and 8% involving bicyclists. Sadly, eight people lost their lives, with 63% of them being pedestrians and 13% bicyclists. The City has a responsibility to make public spaces safe for everyone. This means designing the curb zone to include things like clear intersections and crosswalks, narrowing streets to slow down cars, adding protected bike lanes, and prioritizing pedestrian safety.

2. **The curb zone will be allocated fairly, giving priority to uses that benefit the most people.** The curb space is one of the most valuable public areas in the city. Currently, much of it is used for private vehicle parking, which mainly benefits car owners and leaves out those who rely on public transit, walking, biking, or rolling to get around. To manage the curb space fairly, the City will reallocate it to serve more people. This might mean reducing parking to make room for bus lanes, active pick-up and delivery zones, bike parking, bike share stations, and public spaces.

**ALLOCATING SPACE AT THE CURB FAIRLY MEANS GIVING PRIORITY TO USES THAT BENEFIT THE MOST PEOPLE**

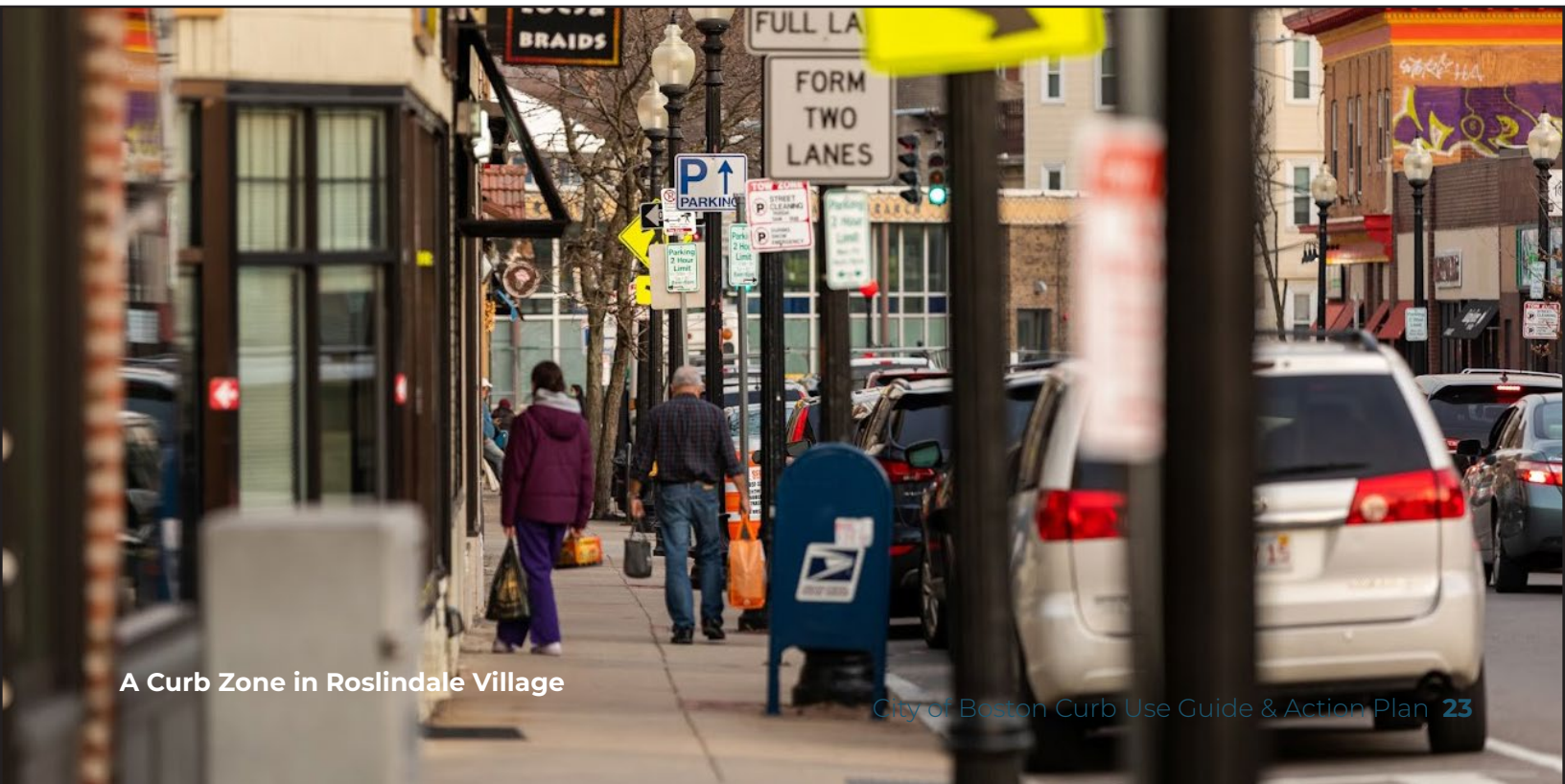
3. **The curb zone will support the economic activity of small and locally owned businesses by meeting their needs and those of their customers.** Small businesses are the backbone of neighborhood commercial areas and Main Streets districts. They help define a neighborhood's identity and provide essential goods and services. The City can help these businesses by allocating curb space based on their needs. For example, restaurants need space for take-out and outdoor dining, retail stores need space for deliveries, and entertainment venues need areas for passenger pick-up and drop-off. Some businesses also need parking for customers who don't live nearby. By balancing these competing demands, the curb zone can help business districts thrive.

4. **The curb zone will improve the quality of life for residents and visitors by reducing stress, increasing safety, and saving time**. Better curb management can achieve these goals by catering to the specific needs of each neighborhood. Since Boston's neighborhoods are diverse, the best strategy for managing curb zones will vary. Some areas might need to focus on commercial loading, others on short-term pick-up and drop-off access, and some on residential parking. Even within the same neighborhood, different streets may have different needs. For example, a residential street next to a busy commercial area will have unique curb demands. These curb management strategies are flexible and will be adapted to fit the specific needs of each neighborhood and street.

**BOSTON'S NEIGHBORHOODS ARE DIVERSE, AND CURB MANAGEMENT STRATEGIES WILL BE TAILORED TO FIT THE UNIQUE NEEDS OF EACH NEIGHBORHOOD AND STREET. INSTEAD OF A ONE-SIZE-FITS-ALL APPROACH**

5. **The curb zone will be managed using the latest technologies and through partnerships with private companies to help the City meet its goals.** The City will work closely with private transportation providers, researchers, and industry leaders to introduce new technologies that improve curb space management. The City will continue to test pilot programs to see how these technologies can enhance street activities. When successful, these technologies will be rolled out citywide to improve services.

6. **Changes to the curb zone will be communicated clearly, and the City will involve affected communities in the decision-making process.** Decisions about curb space can often happen without public input, leading to disagreements. By keeping the public informed about curb-related changes and explaining the reasons behind decisions, the City can reduce confusion and build trust. The Curb Use Guide and Action Plan will provide transparency and show how and why decisions are made.




**A Curb Zone in Roslindale Village**

# ACTION PLAN STRATEGIES AND PROJECTS

The City of Boston's Curb Use Guide & Action Plan is a plan for deciding how to manage curb space. The Guide introduces new tools, rules, and improvements to help us:

1. Make sure the City's curb use policies match its goals for transportation and climate change.
2. Share curb space fairly to benefit everyone.
3. Adjust to new and changing needs for curb use.

The City has identified several strategies that frame a list of projects that will be undertaken in the coming years. These strategies and projects include:

| Strategies | Projects |
|---|---|
| Strategy I: Use Technology and Data to Make More Informed Decisions | I. Build a Curbside Regulation Database<br>II. Set Up and Asset Management System<br>III. Move the Curb Change Process Online<br>IV. Use Technology to Track Curb Activity<br>V. Share Curb Data with the Public |
| Strategy II: Modernize Curb Use Policies to Meet New Demands | I. Overhaul the Residential Permit Parking (RPP) program<br>II. Expand the Use of Parking Meters<br>III. Create Short-Term Access Zones - GoZones!<br>IV. Update the Traffic Rules and Sign Code Guidebooks<br>V. Strategically Deploy Enforcement Resources |
| Strategy III: Improve internal Processes and Curb Management Governance | I. Use the Curb Use Guide for All Projects<br>II. Centralize Curb Management Decisions<br>III. Standardize Curb Data Collection and Evaluation<br>IV. Better Integrate Other Departments and Programs<br>V. Improve Engagement and Communication |
| Strategy IV: Strengthen Public-Private Partnerships to Improve Curb Management | I. Create an Urban Delivery Management Plan<br>II. Pilot New Technologies<br>III Support the Shift Towards Zero Emission Vehicles<br>IV. Work with New Curb Demand Generators<br>V. Simplify the Approval Process for Active Curbside Uses |

# STRATEGY I: USE TECHNOLOGY AND DATA TO MAKE MORE INFORMED DECISIONS

This strategy explains how to better understand the curb zone using technology and data to guide decisions about curb use. The projects describe how data will be collected, used, and what tools are needed.

### *Project I. Build a Curbside Regulation Database*

- The City will create a digital database of all curbside regulations. This database will help make informed decisions for planning and projects.

### *Project II. Set Up an Asset Management System*

- The City will create a system to manage signs and other curbside assets. When new signs are put up or curb use changes, the database will update to show the current conditions.

### *Project III. Move the Curb Change Process Online*

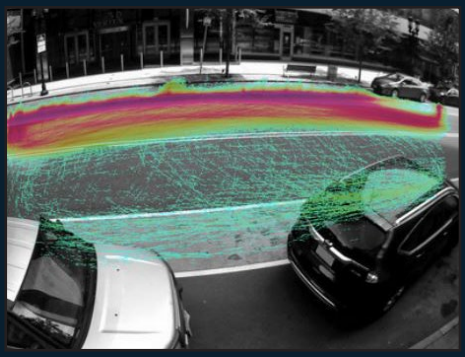
- The City will switch from using paper and email to a digital platform for curb changes and decisions. This platform will connect with the asset management system and track decisions, showing why they were made and who was involved.

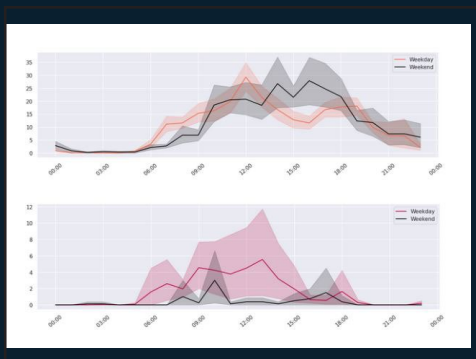
### *Project IV. Use Technology to Track Curb Activity*

- The City will use cameras, sensors, and other technology to monitor curbside activity. This will make data collection more efficient and reduce the resources needed for studies.

### *Project V. Share Curb Data with the Public*

- An interactive online map will show information like meter locations, time limits, costs, enforcement hours, and resident parking zones.






The City has tested using cameras and sensors to measure curb activity. In one example, the City installed a sensor in the Seaport District to monitor a 5-Minute Pick-Up/Drop-Off Zone. The City wanted to learn how the zone was being used, what types of vehicles were using it, and how long people were staying in the zone.

The results showed that, on average, 255 cars and 30 trucks used this 80-foot stretch of curb (about 4 parking spaces) each day. One challenge for the City is enforcing these short-time curb access zones. The data revealed that the average stay was 4 minutes and 20 seconds, which is below the 5-minute limit. This tells us that even with enforcement challenges, signage alone can influence behavior.

The top graphic on the left shows the sensor view and a heat map of the data. The bottom graphic shows the number of cars and trucks at different times of the day.

# STRATEGY II: MODERNIZE CURB MANAGEMENT POLICIES TO MEET NEW DEMANDS

This strategy highlights the rules, regulations, and programs that need updating to meet current needs. The projects outline steps and possible updates to achieve these goals.

### *Project I. Overhaul the Residential Permit Parking (RPP) program*

- The City will review and update the RPP policies to better serve residents and support the City's goals for changing transportation modes and addressing climate change..
- Changes to consider include limits on the number of permits per household, adjusting permit zones, changing which new buildings can get permits, improving the process for temporary permits, and adding a fee for extra permits. Data on curb activity will help decide if new areas should have RPP.

### *Project II. Expand the Use of Parking Meters*

- Parking meter policies will be updated based on current demand. Some meters may operate until 10 pm or later, and rates will be set to encourage frequent turnover. Meters might replace time-limited parking in areas where people often park too long. Multi-space meters will be preferred over single-space meters to reduce curb congestion and improve access.

### *Project III. Create Short-Term Access Zones - GoZones!*

- The City will create general-purpose zones for quick access. These GoZones will handle deliveries, food pick-up, passenger pick-up/drop-off, and other short visits.

### *Project IV. Update the Traffic Rules and Sign Code Guidebooks*

- The Traffic Rules and Regulations will be revised to match new curb rules. The Sign Code Guidebook will be updated regularly and will simplify and reduce the number of street signs.

### *Project V. Strategically Deploy Enforcement Resources*

- Enforcement will be better equipped and planned to focus on problem areas and new regulations.

The curb zone is a valuable and popular space. Charging a fee to use the curb helps manage demand and ensures fair access for everyone. Parking meters encourage vehicles to move after a certain time, allowing more people to park and making the parking space more efficient.

As we use different strategies to manage the curb zone, how we price it will be important in making sure it works well for everyone.

# STRATEGY III: IMPROVE PROCESSES AND CURB MANAGEMENT GOVERNANCE

This strategy looks at how to handle curb management and the rules for making decisions about it. We'll be changing some policies, decision-making processes, and communication methods to achieve this.

### *Project I. Use the Curb Use Guide for All Projects*

- The Curb Zone Management Guide will be used to make decisions about curb regulations. This Guide will help with various projects, including requests from residents and businesses, new developments, and changes to streets, like adding bus or bike lanes.

### Project: II. Centralize Curb Management Decisions

- A team in the Streets Policy & Planning Department will handle curb management decisions. They will plan curb use across the city, collect data, review regulations for buses, bikes, and pedestrians, and implement strategies from the Curb Use Guide. The process for changing curb regulations will be simplified.

### *Project III. Standardize Curb Data Collection and Evaluation*

- The City will create a standard process for collecting and evaluating curbside data. This includes parking studies, camera and in-person observations, and demand modeling based on land use. This data will help make curb change decisions and make the process transparent.

### *Project IV. Better Integrate Other Departments and Programs*

- Programs from other departments, like the Food Truck Program and Accessible Parking, will be better included in the curb management process.
- Decisions about curb changes for new developments and projects will be reviewed by the curb management planning team.

### *Project V. Improve Engagement and Communication*

- The Streets Team will work with other City departments to develop a good engagement strategy. Decision-making will be transparent, and data will be shared with privacy protections.
- Communication between the public, the Streets Department, and other divisions will be improved to speed up decision-making and services.

# STRATEGY IV: STRENGTHEN PUBLIC-PRIVATE PARTNERSHIPS TO IMPROVE CURB MANAGEMENT

This strategy focuses on how the City can work with private transportation and technology companies to achieve common goals. Here are the projects to help make this strategy work:

### *Project I: Create an Urban Delivery Management Plan*

- The City will develop a plan to manage different curb access needs for goods delivery. We will work with private delivery companies to find the best practices and test new ideas with pilot programs. This plan will set goals and strategies for managing deliveries, including freight and parcels.

### *Project II. Pilot New Technologies*

- The City will collaborate with private companies to test new technologies, such as paying for parking through navigation apps, creating virtual zones, processing curb access fees automatically, and setting up curb reservation systems.

### *Project III. Support the Shift Towards Zero Emission Vehicles*

- The City will promote the use of e-bikes and build the necessary infrastructure to support them for deliveries. We will also work with private partners to find the best spots for electric vehicle charging stations.

### *Project IV. Work with New Curb Demand Generators*

- The City will collaborate with Transportation Network Companies (TNCs) and Delivery Network Companies (DNCs) to address issues like double parking and unsafe driver behavior caused by their technologies.

### *Project V. Simplify the Approval Process for Active Curbside Uses*

- The City will work with other departments to make it easier for food trucks, retail vendors, and others to get permission to use curb space for their activities. This may include offering day permits for these uses.

Over two years, the City worked with Turnstone to track data from parking meters. We used this data to see how full the parking spots were and to predict future parking availability based on past data. The prediction model was about 89% accurate, meaning it was correct 9 out of 10 times. We tested this model in the Back Bay and Beacon Hill neighborhoods. The results, shown below, indicate that Beacon Hill may need higher parking meter rates to help reduce overcrowding.

| Area | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Back Bay | 58.5 | 60.6 | 64.7 | 66.5 | 68.4 | 68.6 | 67.4 | 65.3 | 64 | 61.8 | 59.4 | 52.7 |
| Beacon Hill | 54.7 | 74.7 | 101 | 122.3 | 135.6 | 122.5 | 125.2 | 126.2 | 121.5 | 116.8 | 113.2 | 104.1 |
| **Average** | **57.7** | **63.6** | **72.4** | **78.4** | **82.6** | **80** | **79.7** | **78.2** | **76.2** | **73.4** | **70.8** | **63.6** |

Below target (<70%).
On target (70-85%). N
Above target (>85%).

# CURB USE PILOT PROGRAMS

## RIDE-HAIL PICK UP/DROP OFF (PU/DO) ZONE

In 2019, more than 45 million ride-hail trips started in the City of Boston. Before ride-hail companies, most passengers used taxis. These trips were managed with taxi stands and a few pick-up/drop-off spaces. The sudden rise in ride-hail trips meant thousands of extra vehicles were competing for curb space. This caused double parking, blocked bus and bike lanes, and unsafe behavior by drivers and passengers.

**PU/DO signage**

To fix this, the City started a pilot program to set aside parts of the curb for passenger Pick-Up/Drop-Off (PU/DO). These new zones were different from the old rules because they:

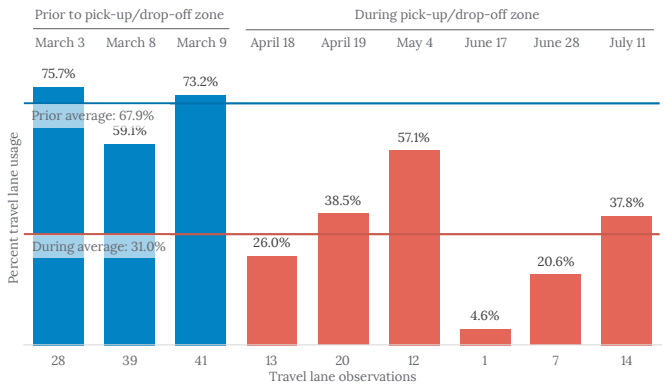
- Limited stopping to 5 minutes
- Required drivers to stay with their vehicle
- Included a graphic of a person holding a smartphone and hailing a car

The PU/DO Zones were open to everyone, but we worked with ride-hail companies to create virtual boundaries around the zones, so drivers and passengers would use them.

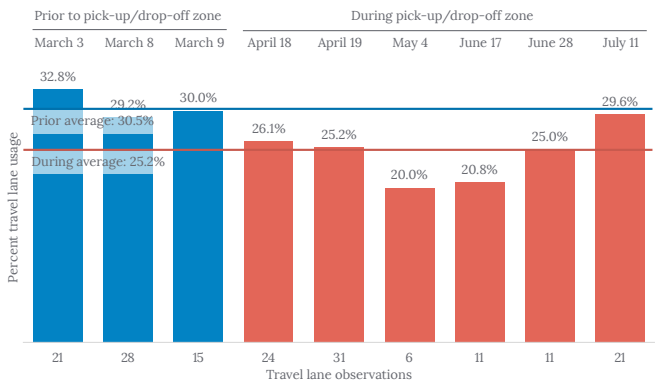
**Results of the Pilot Program:**

- Double parking decreased from 60% of stops to 31% at Location A, and 30% to 25% at Location B
- Curb productivity increased from 2-3 vehicles served per hour as metered parking, to 9-14 vehicles per hour as PU/DO

**Target Block (Location A)**




**Tiger Moma Block (Location B)**

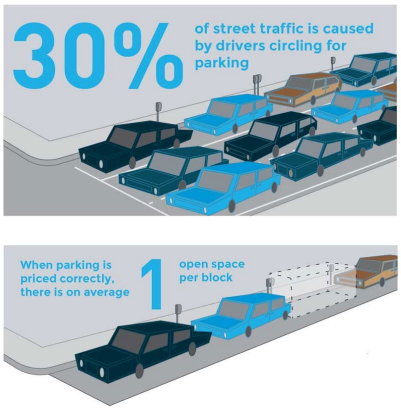



Based on the positive outcomes of the pilot program, the regulation was made permanent and installed in more locations.

# PERFORMANCE PARKING (DEMAND BASED METER PRICING)

It's estimated that up to 30% of street traffic comes from drivers circling around looking for parking. When parking is priced right, there are usually one or two open parking spaces on a block. This reduces the number of drivers circling, makes the streets safer with fewer distracted drivers, and lowers greenhouse gas emissions.

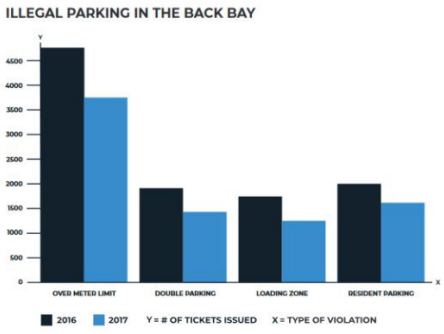
To address this, the City ran a one-year performance parking pilot program in the Back Bay and Seaport neighborhoods. During the pilot, the City adjusted parking prices and observed the effects on occupancy, turnover, and parking violations. The City tested whether raising meter rates would change driver behavior. Hourly meter rates were increased citywide, ranging from $2.00 to $3.75, while in one neighborhood, the rate was lowered from $2.50 to $1.25. Data was collected in the Back Bay and Seaport neighborhoods.

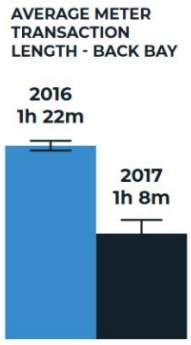



**Target parking occupancy**

**In the Back Bay Neighborhood:**

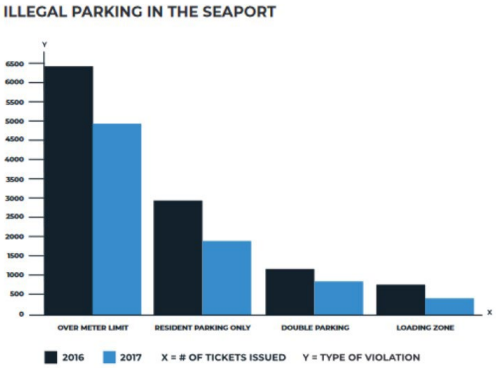
- The price of hourly parking increased from $1.25 to $3.75.
- Double parking decreased by 14%, and illegal parking in loading zones decreased by 33%.
- The average stay at a meter decreased from 1 hour and 22 minutes to 1 hour and 8 minutes.
- In the commercial area of Back Bay, occupancy rates decreased from 100% to 90%, and in residential areas, from 100% to 85%.




**In the Seaport Neighborhood:**

- The City adjusted prices for individual blocks to reach a target of 80% occupancy. Hourly prices ranged from $1.00 to $4.00.
- There was no significant change based on price differences per block.
- Illegal parking in loading zones decreased by 44%, and double parking decreased by 24%.




**Pilot Study Results:**

The City found that raising meter prices increased parking availability and reduced congestion. The City also learned that a simpler, zone-based pricing system had a bigger impact on drivers' decisions than a more complicated block-based pricing model.

## CAR SHARE BOSTON (DRIVE BOSTON)

To reduce the number of cars owned per household, cut down on vehicle miles traveled, lower greenhouse gas emissions, and encourage people to use different ways of getting around, the City started a pilot program to increase access to car share services. During the pilot, the City leased 80 on- and off-street parking spaces to two car share companies.

**During the first 18 months of the pilot:**

- Car share vehicles traveled more than 1 million miles.
- Vehicles were used an average of 7 hours per day.
- Each vehicle had an average of 23 users.

Since each car share vehicle can replace up to 13 private cars, the City saw the pilot as a success in reaching its goals.

**Program Expansion:**

The City expanded the program from 80 to 250 parking spaces, focused more on adding zero-emission vehicles, and included more car share companies in the program.


**Car Share Boston Signage**

## GOHUBS! NEIGHBORHOOD MOBILITY HUBS

To encourage people to use different types of transportation, the City launched the GoHubs! pilot program in East Boston. GoHubs! are easy-to-spot places where you can find various transportation options, information, and community features, making it simpler to take trips using different modes of transportation. The eight pilot locations were centered around bus stops, subway stations, and Bluebikes stations.

The pilot program added 3 bike share stations, 33 bike share bikes, 14 bike parking racks, 14 car share spaces, 4 smart benches with device charging, and created 8 easy-to-recognize public spots with information and transportation options all in one place.

**Pilot Findings:**

Early results show that GoHubs! can change behavior and lead to fewer car trips. People who took the survey wanted to see more placemaking, public art, and visible branding.


**Public Event for Go-Hubs Outreach**

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Endnotes

U.S. Department of Transportation Federal Highway Administration. 03/14/2022. Curbside Management. Optimizing Curb Productivity. 02/21/2023. https://www.fhwa.dot.gov/livability/fact_sheets/curbside_fact_sheet.cfm

1 (1) Metropolitan Area Planning Council. February 2021. Hidden and in Plain Sight: Impacts of E-commerce in Massachusetts. 02/21/2023. https://www.mapc.org/wp-content/uploads/2021/02/Feb2021-Ecommerce-Report.pdf; (2) Financial Holdings. 2022. Online Shopping Statistics and Trends in the USA. 02/21/2023. finical-holdings.com/online-shopping-statistics-and-trends-in-the-usa/; (3) Metropolitan Area Planning Council. 12/15/2022. From App to Table: Rapid Deliveries in Massachusetts. 02/21/2023. https://www.mapc.org/resource-library/rapid-food-deliveries/; (4) Department of Public Utilities, Transportation Network Company Division. 05/17/2022. 2021 Rideshare Data Report. 02/21/2023. https://www.mass.gov/info-details/2021-rideshare-data-report; (5) Boston Transportation Department. 07/25/2022. Transportation Projects Across Boston. 02/21/2023. https://www.boston.gov/departments/transportation/transportation-projects-across-boston; (6) Bluebikes. 2022. System Data. 02/21/2023. https://www.bluebikes.com/system-data(7) Boston Transportation Department. 03/11/22. Car Share Boston. 02/21/2023. https://www.boston.gov/departments/transportation/car-share-boston; (8) Boston Transportation Department. Go Boston 2030, Boston in 2030. 02/21/2023. https://www.boston.gov/sites/default/files/file/document_files/2017/03/go_boston_2030_-_6_boston_in_2030_spreads.pdf (9) City of Boston. 2020, Zero-Emission Vehicle Roadmap. 02/21/2023. https://www.boston.gov/sites/default/files/file/2020/10/Boston%20ZEV%20Roadmap_1.pdf (10) City of Boston. 2022. Open Streets Boston. 02/21/2023. https://www.openstreetsboston.org/

U.S. Access Board. 07/21/2022. Design Recommendations for Accessible Electric Vehicle Charging Stations. 02/21/2023. https://www.access-board.gov/tad/ev/

City of Boston Parks and Recreation. 10/13/2022. Urban Forest Plan. 02/21/2023. https://www.boston.gov/departments/parks-and-recreation/urban-forest-plan